

ANNEX A: Test Result

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the loop antenna is vertical, the others are vertical and horizontal. and the worst case was recorded.

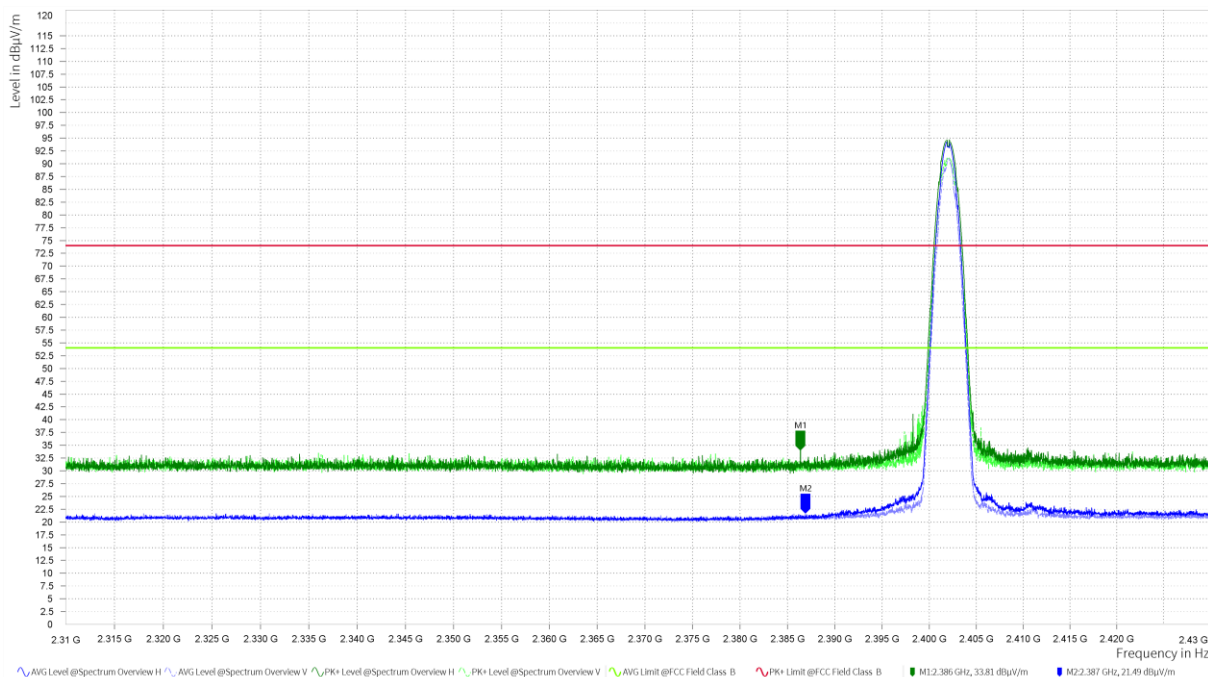
1. Unwanted Emission

1.1. Bluetooth

The following graphs display the maximum values of horizontal and vertical by software.
Blue trace uses the peak detection, Green trace uses the average detection.

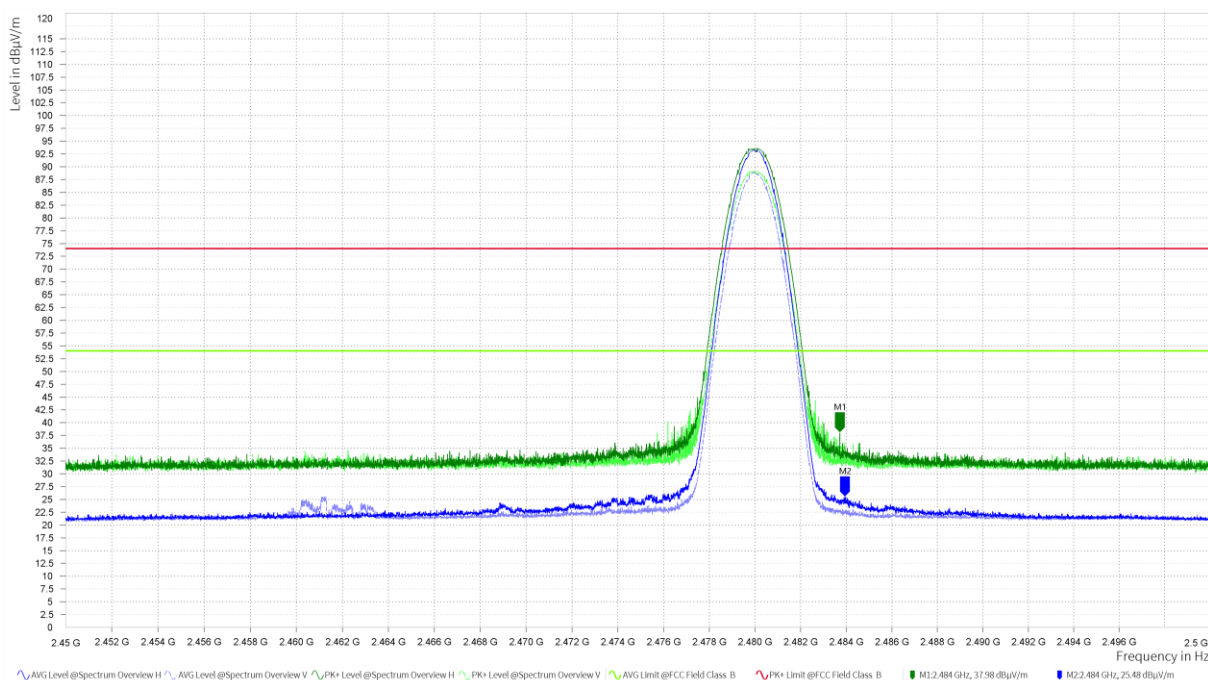
The signal beyond the limit is carrier.

Spectrum Overview H/V



BANDEDGE_BR CH0_X_2.31-2.43GHz

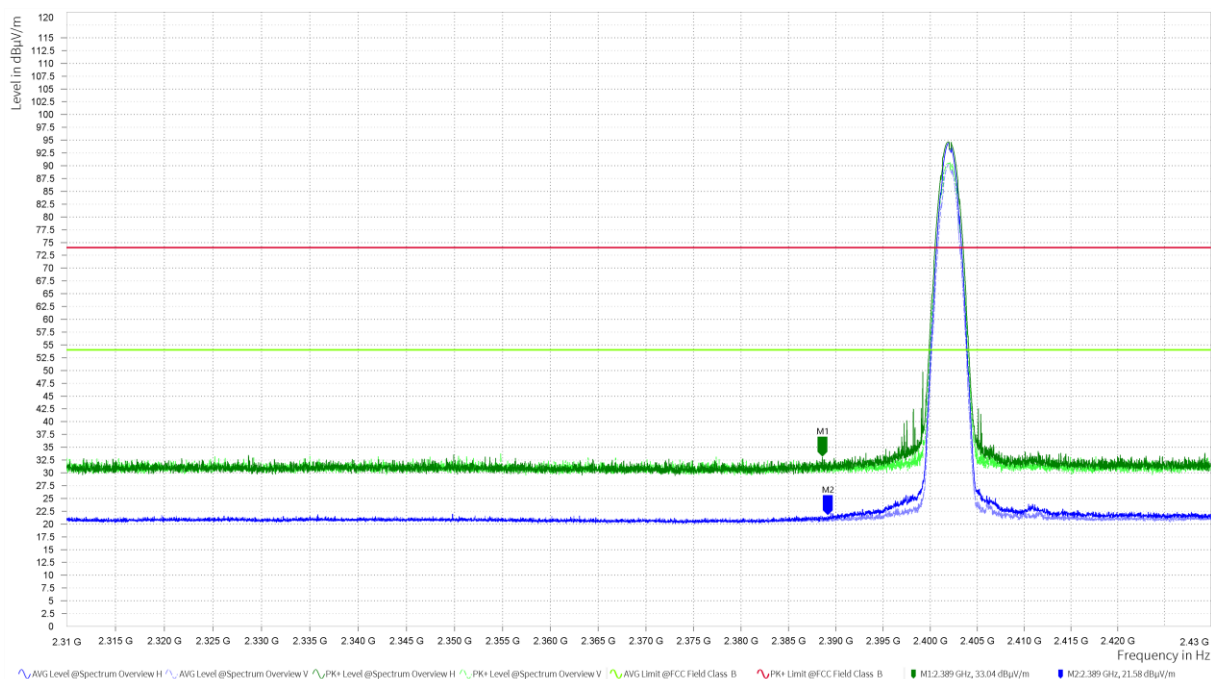
Spectrum Overview H/V



BANDEDGE_BR CH78_X_2.45-2.5GHz

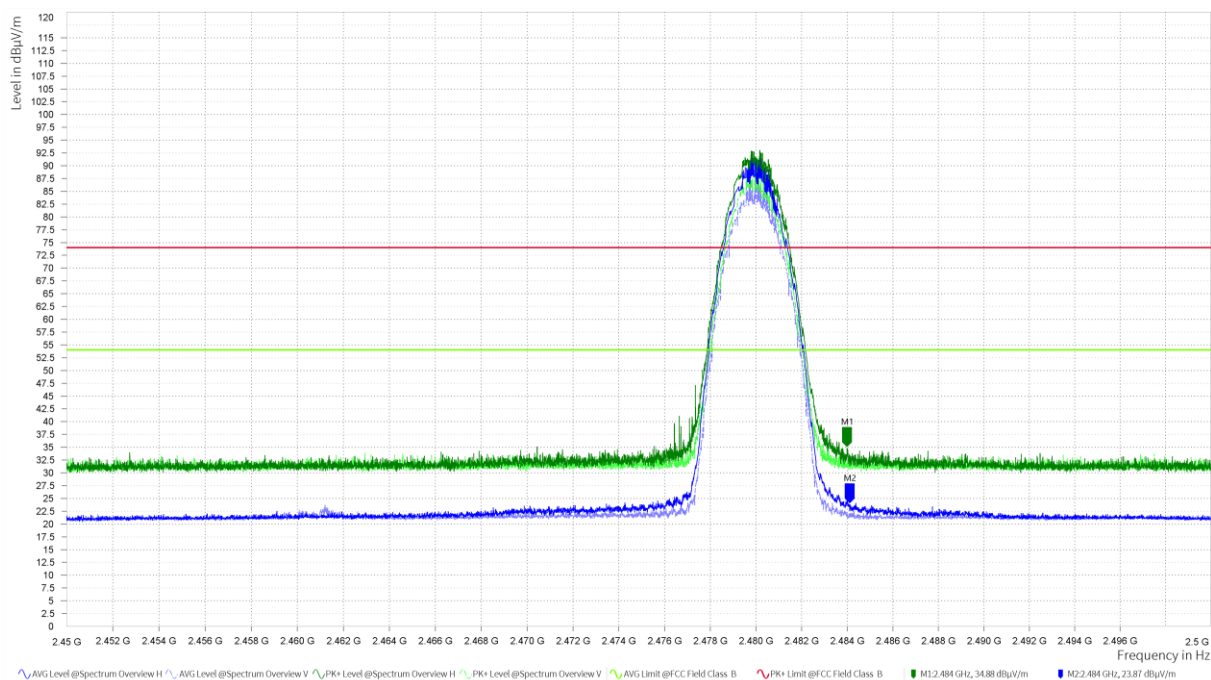
The bandage was performed in all EDR mode (2DH5 and 3DH5), 3DH5 was selected as the worse condition. The test data of the worst-case condition was recorded in this report.

Spectrum Overview H/V



BANDEDGE_EDR CH0_X_2.31-2.43GHz

Spectrum Overview H/V



BANDEDGE_EDR CH78_X_2.45-2.5GHz

Result of RE

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier.
The Radiates Emission from 18GHz to 26.5GHz are more than 20dB below the limit are not reported.

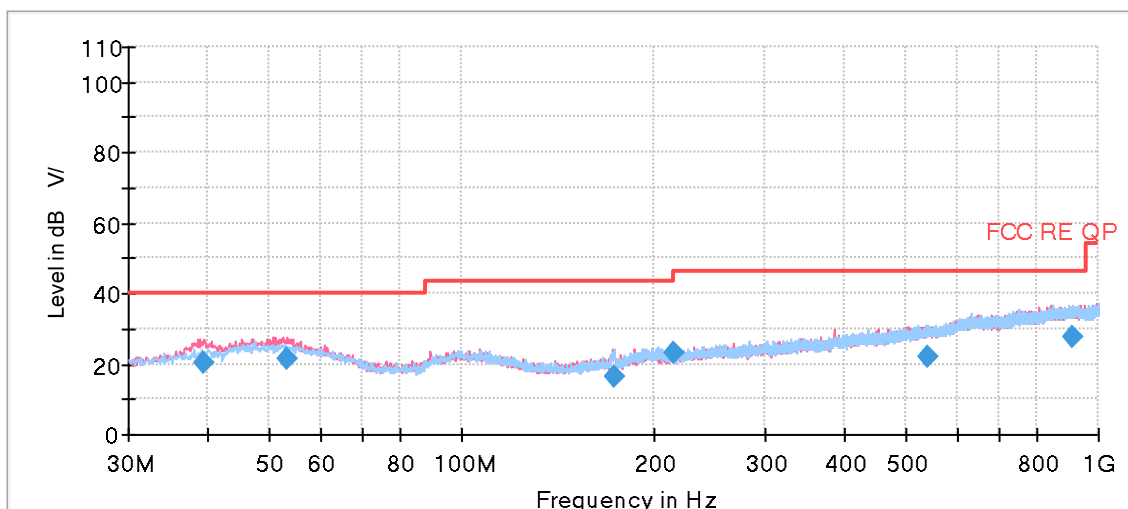
Remark:

1. **Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**
2. **Margin = Limit – Quasi-Peak/ MAX Peak/ Average**
3. **A symbol ($\text{dB } \mu\text{V/m}$) in the test plot below means ($\text{dB}\mu\text{V/m}$)**
4. **The following graphs display the maximum values of horizontal and vertical by software.**
5. **For below 1GHz**



Continuous TX mode:

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels. The test data of the worst-case condition was recorded in this report.

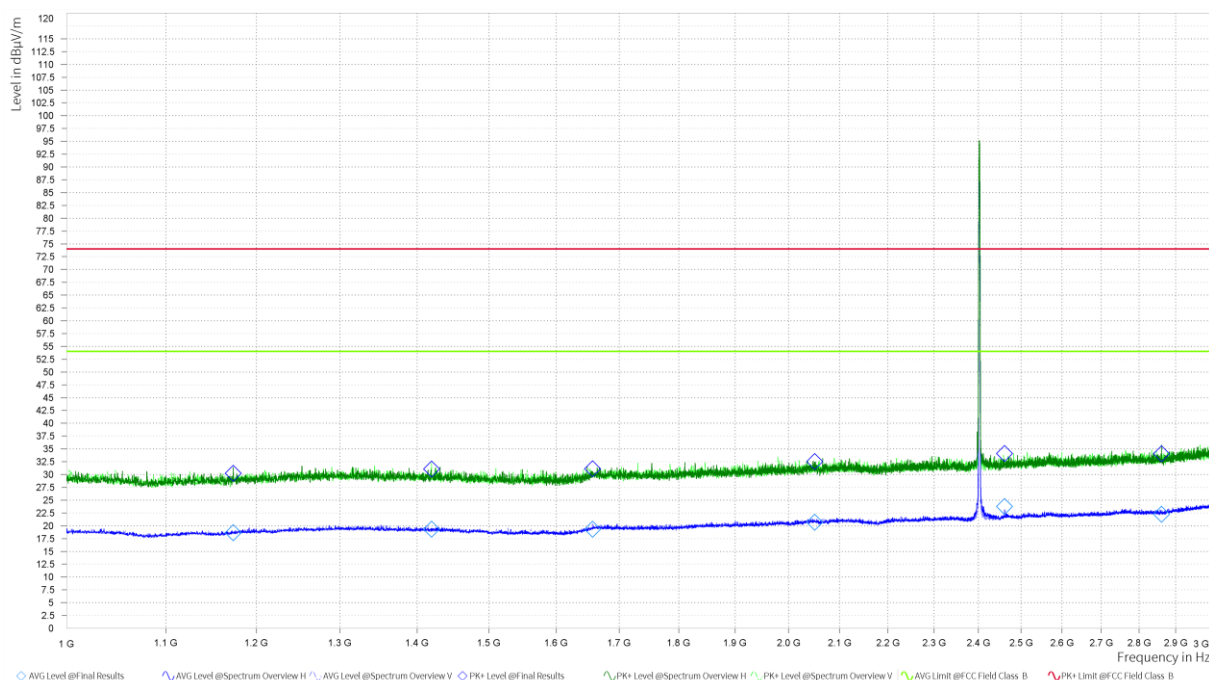


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak ($\text{dB}\mu\text{V/m}$)	Limit ($\text{dB}\mu\text{V/m}$)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
39.371250	20.09	40.00	19.91	100.0	V	256.0	19.7
53.406250	21.20	40.00	18.80	103.0	V	298.0	21.0
173.796250	16.32	43.50	27.18	125.0	V	4.0	20.0
215.997500	23.30	43.50	20.20	100.0	V	97.0	18.6
540.012500	21.79	46.00	24.21	101.0	H	14.0	26.1
909.310000	27.89	46.00	18.11	184.0	V	1.0	31.0

DH5-Channel 0

Spectrum Overview H/V

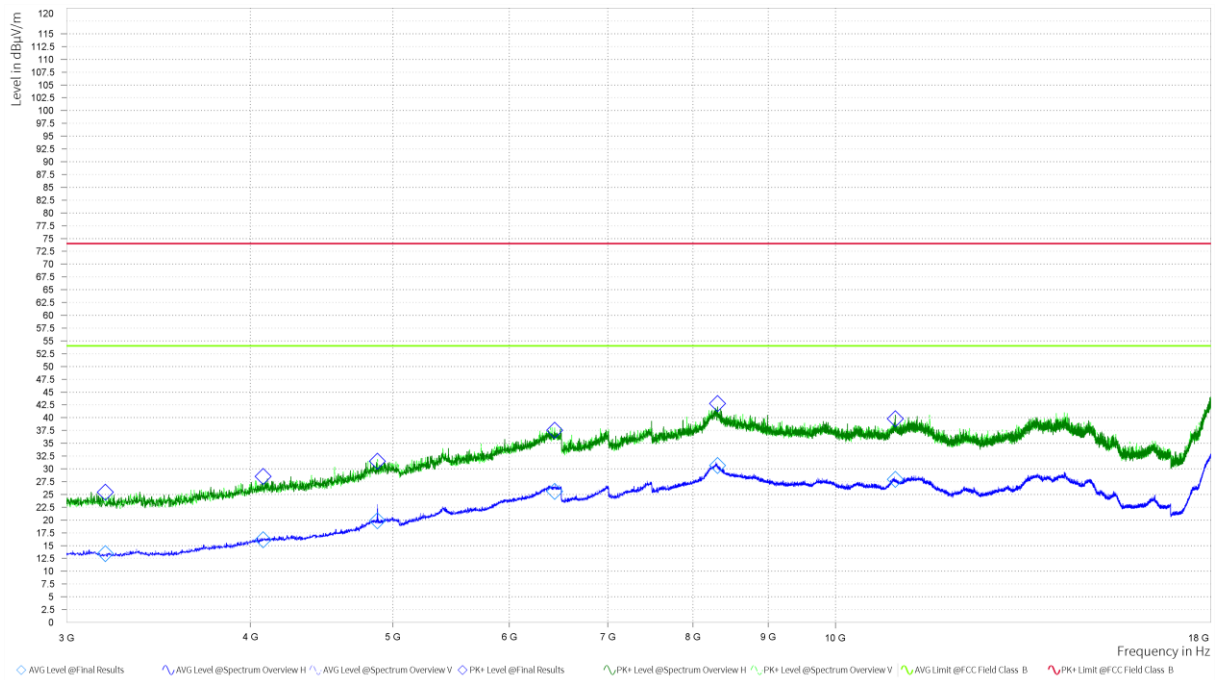


Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
1,173.500	30.20	74.00	43.80	18.64	54.00	35.36	-10.77	H	206.9	2.00	1.000
1,419.500	31.05	74.00	42.95	19.28	54.00	34.72	-10.52	V	116.4	2.00	1.000
1,657.000	31.11	74.00	42.89	19.28	54.00	34.72	-10.35	H	194.4	1.00	1.000
2,051.000	32.52	74.00	41.48	20.64	54.00	33.36	-8.58	H	318.9	1.00	1.000
2,460.500	34.04	74.00	39.96	23.74	54.00	30.26	-7.50	V	279	1.00	1.000
2,861.000	34.00	74.00	40.00	22.20	54.00	31.80	-6.25	H	180.4	1.00	1.000

Spectrum Overview H/V

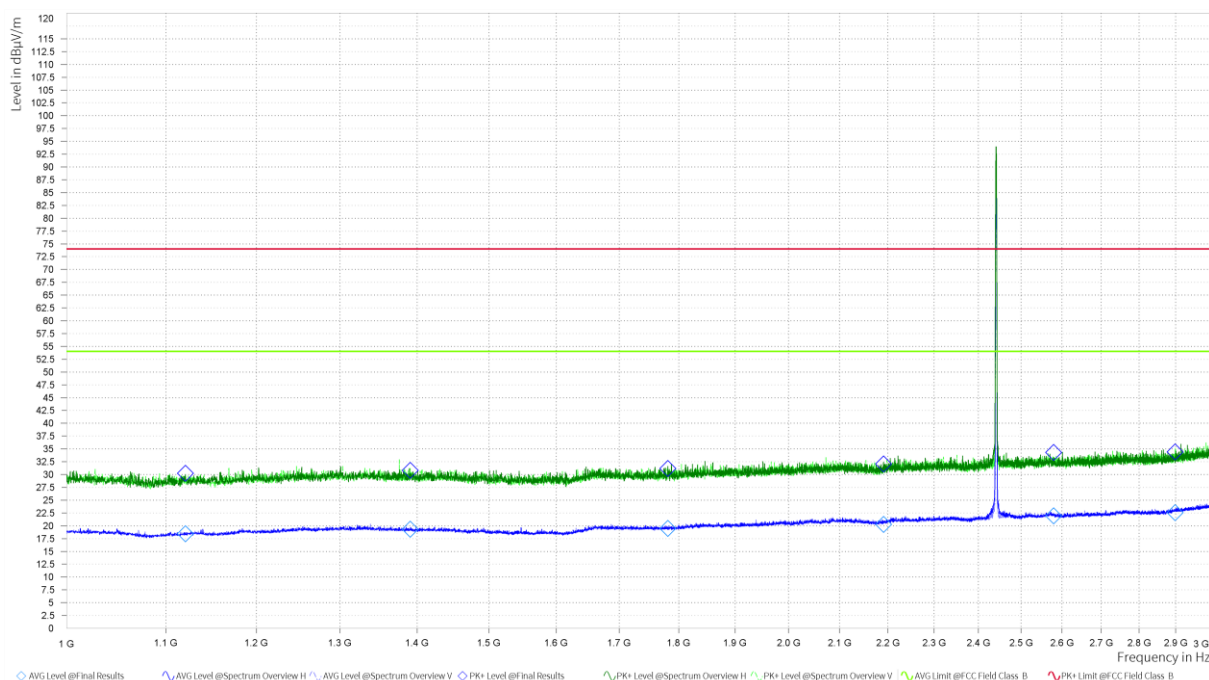


Radiates Emission from 3GHz to 18GHz

Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
3,187.500	25.43	74.00	48.57	13.42	54.00	40.58	-15.54	V	23.6	2.00	1.000
4,080.000	28.46	74.00	45.54	16.12	54.00	37.88	-13.53	V	38.4	1.00	1.000
4,880.625	31.46	74.00	42.54	19.82	54.00	34.18	-9.96	V	171.9	1.00	1.000
6,442.500	37.51	74.00	36.49	25.58	54.00	28.42	-4.56	V	3.2	2.00	1.000
8,313.750	42.74	74.00	31.26	30.61	54.00	23.39	-0.21	H	180	1.00	1.000
10,980.000	39.76	74.00	34.24	27.91	54.00	26.09	-1.98	H	0	1.00	1.000

DH5-Channel 39

Spectrum Overview H/V

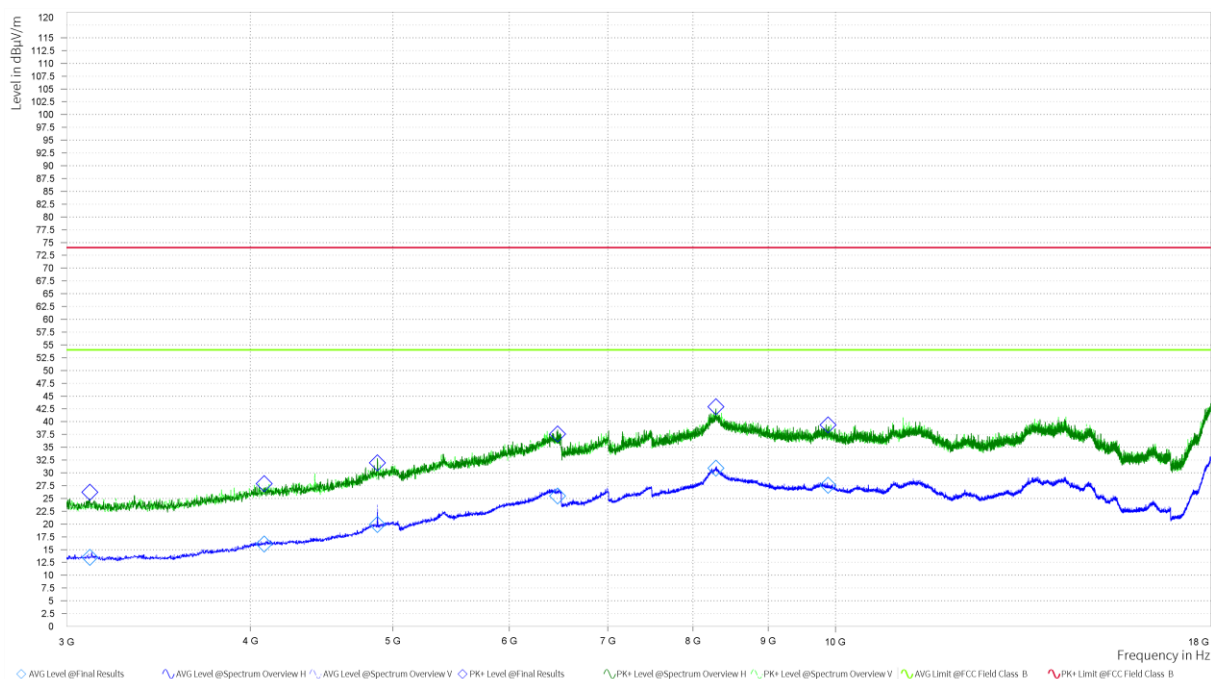


Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
1,120.750	30.23	74.00	43.77	18.44	54.00	35.56	-10.96	H	45.5	1.00	1.000
1,390.750	30.78	74.00	43.22	19.33	54.00	34.67	-10.58	V	79.1	2.00	1.000
1,781.000	31.15	74.00	42.85	19.45	54.00	34.55	-10.41	H	225.7	2.00	1.000
2,190.750	32.04	74.00	41.96	20.24	54.00	33.76	-8.24	H	59	1.00	1.000
2,579.750	34.26	74.00	39.74	21.89	54.00	32.11	-7.05	H	358.3	2.00	1.000
2,898.750	34.37	74.00	39.63	22.53	54.00	31.47	-5.96	V	24.3	2.00	1.000

Spectrum Overview H/V

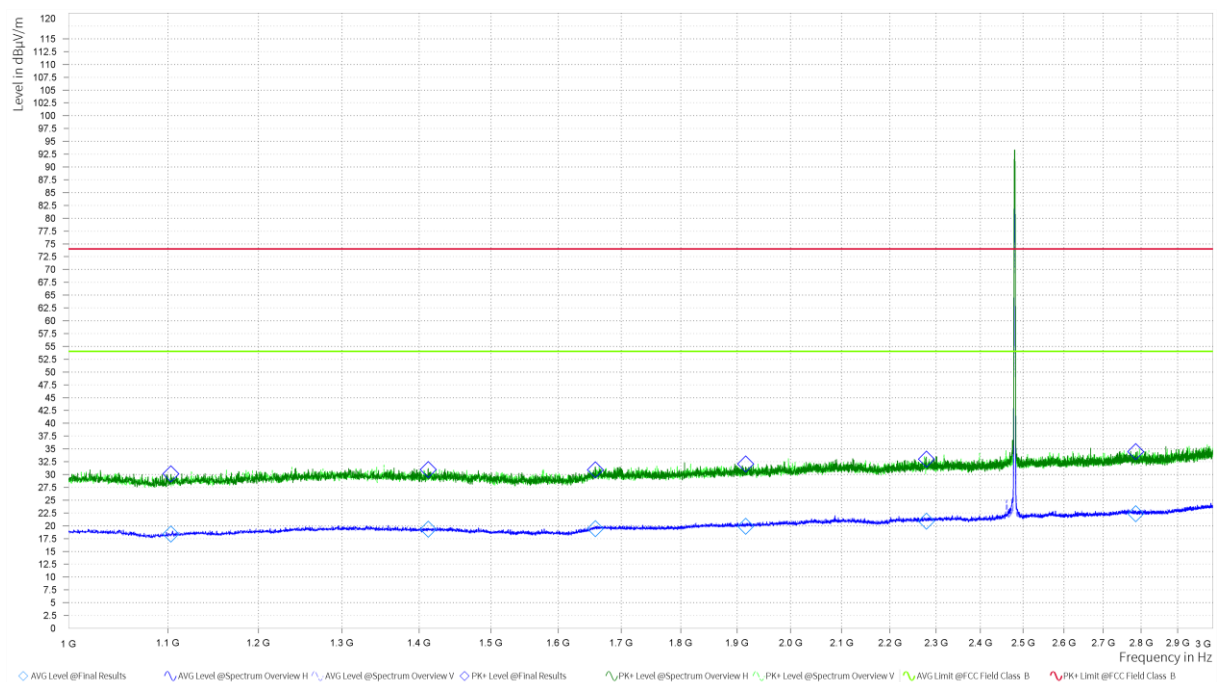


Radiates Emission from 3GHz to 18GHz

Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
3,110.625	26.19	74.00	47.81	13.48	54.00	40.52	-15.46	H	163.9	2.00	1.000
4,087.500	27.86	74.00	46.14	16.08	54.00	37.92	-13.48	H	98.4	1.00	1.000
4,880.625	31.95	74.00	42.05	19.86	54.00	34.14	-9.96	V	178.6	2.00	1.000
6,472.500	37.57	74.00	36.43	25.45	54.00	28.55	-4.73	H	0	1.00	1.000
8,291.250	42.89	74.00	31.11	30.87	54.00	23.13	0.07	H	16.4	1.00	1.000
9,885.000	39.35	74.00	34.65	27.56	54.00	26.44	-3.47	V	180	2.00	1.000

DH5-Channel 78

Spectrum Overview H/V

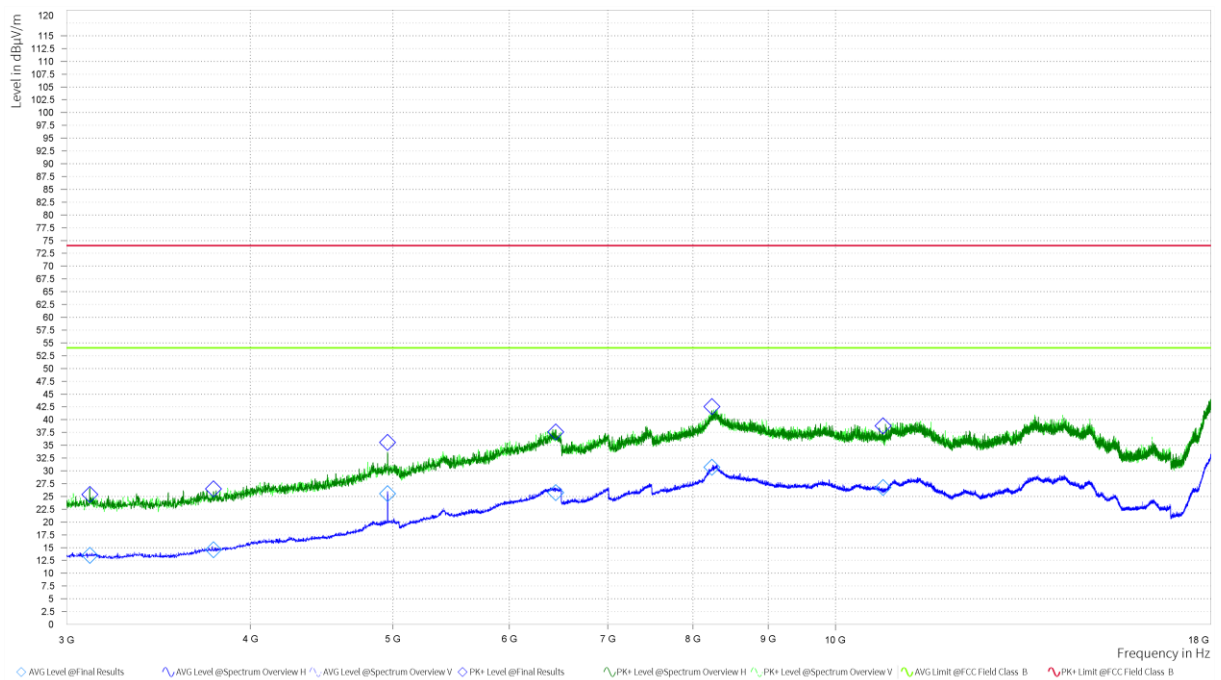


Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
1,103.250	30.12	74.00	43.88	18.35	54.00	35.65	-11.10	H	0.3	1.00	1.000
1,412.250	30.96	74.00	43.04	19.32	54.00	34.68	-10.53	H	150.3	2.00	1.000
1,658.000	30.91	74.00	43.09	19.39	54.00	34.61	-10.33	H	279.7	2.00	1.000
1,915.500	32.01	74.00	41.99	19.87	54.00	34.13	-9.49	H	341.1	2.00	1.000
2,278.750	33.00	74.00	41.00	20.88	54.00	33.12	-8.05	H	313.9	2.00	1.000
2,785.750	34.43	74.00	39.57	22.36	54.00	31.64	-6.46	H	121.4	1.00	1.000

Spectrum Overview H/V



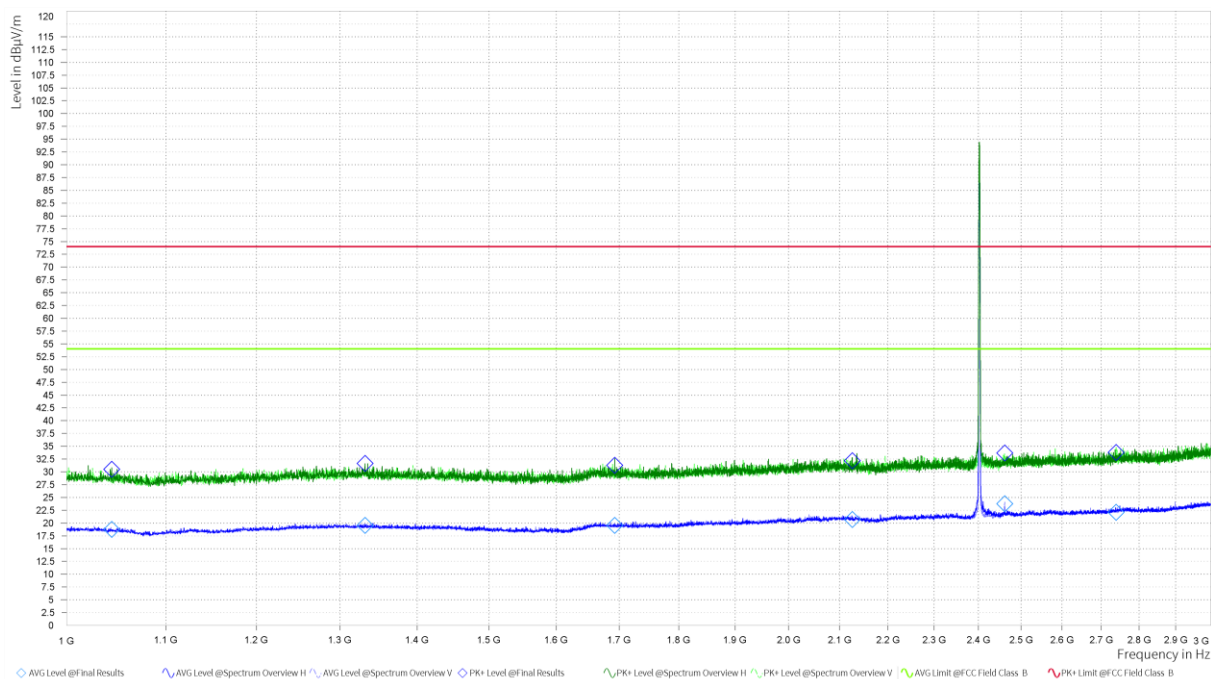
Radiates Emission from 3GHz to 18GHz

Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
3,110.625	25.34	74.00	48.66	13.48	54.00	40.52	-15.46	H	69.1	1.00	1.000
3,776.250	26.47	74.00	47.53	14.56	54.00	39.44	-14.42	H	120.9	1.00	1.000
4,959.375	35.52	74.00	38.48	25.53	54.00	28.47	-9.74	H	180	2.00	1.000
6,453.750	37.58	74.00	36.42	25.72	54.00	28.28	-4.63	H	9.8	1.00	1.000
8,238.750	42.53	74.00	31.47	30.70	54.00	23.30	-0.45	H	76.5	1.00	1.000
10,771.875	38.75	74.00	35.25	26.70	54.00	27.30	-3.06	V	39.2	2.00	1.000

The Radiates Emission was performed in all EDR mode (2DH5 and 3DH5), 3DH5 was selected as the worse condition. The test data of the worst-case condition was recorded in this report.

3DH5-Channel 0

Spectrum Overview H/V

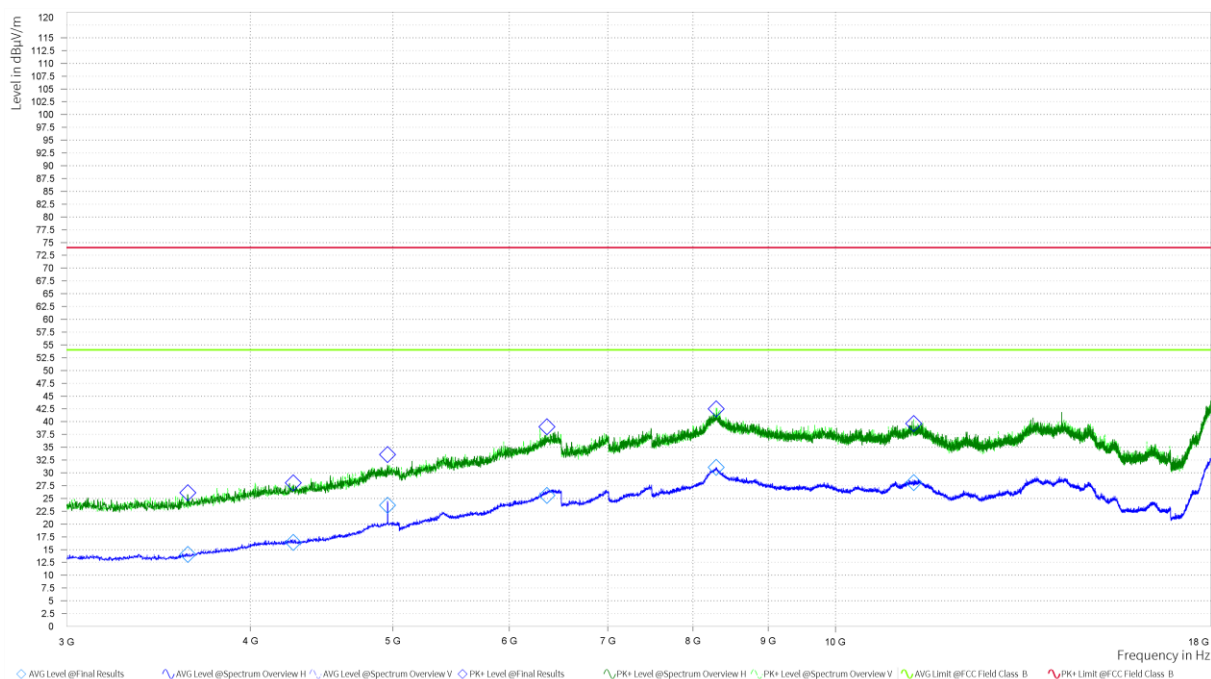


Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
1,044.250	30.48	74.00	43.52	18.73	54.00	35.27	-11.38	H	178.7	1.00	1.000
1,331.750	31.63	74.00	42.37	19.49	54.00	34.51	-10.54	H	154.3	1.00	1.000
1,692.500	31.24	74.00	42.76	19.50	54.00	34.50	-10.49	H	12.3	2.00	1.000
2,126.000	32.13	74.00	41.87	20.68	54.00	33.32	-8.49	H	45.5	2.00	1.000
2,461.250	33.63	74.00	40.37	23.76	54.00	30.24	-7.50	V	115.1	2.00	1.000
2,738.750	33.75	74.00	40.25	22.09	54.00	31.91	-6.58	V	55.9	2.00	1.000

Spectrum Overview H/V

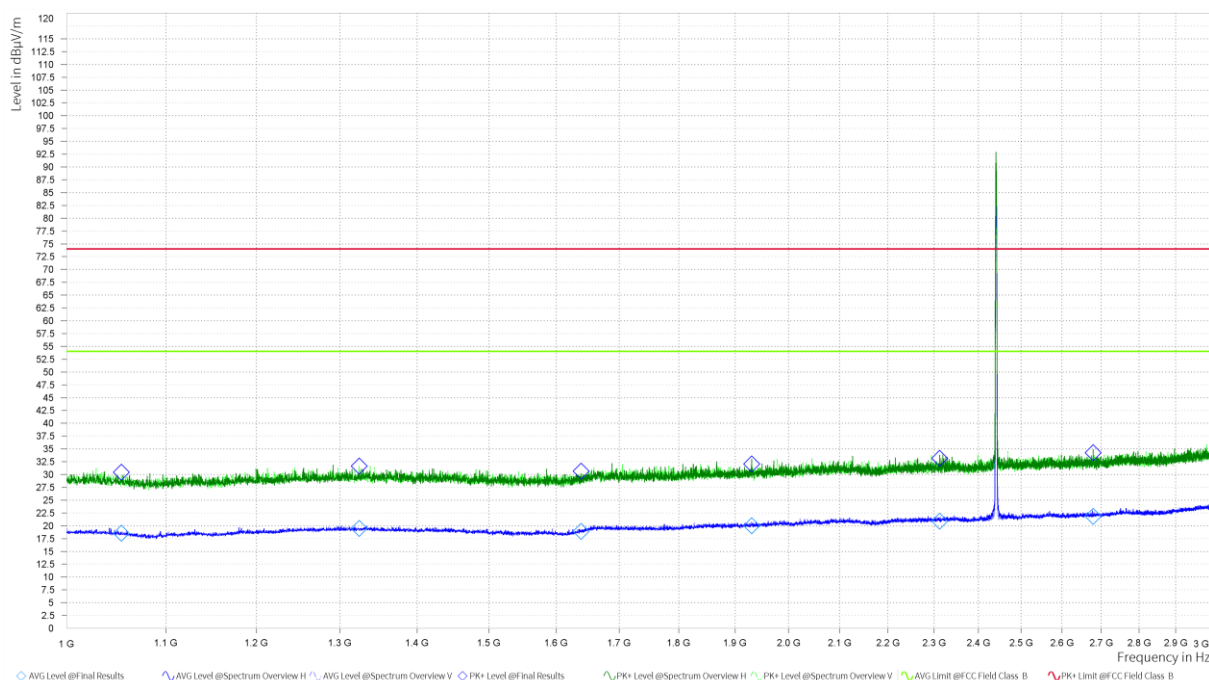


Radiates Emission from 3GHz to 18GHz

Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
3,626.250	26.07	74.00	47.93	14.05	54.00	39.95	-14.86	H	62.1	1.00	1.000
4,278.750	28.02	74.00	45.98	16.37	54.00	37.63	-12.59	H	54.6	1.00	1.000
4,959.375	33.53	74.00	40.47	23.61	54.00	30.39	-9.74	H	176.2	2.00	1.000
6,363.750	38.98	74.00	35.02	25.58	54.00	28.42	-4.51	V	31.5	2.00	1.000
8,296.875	42.49	74.00	31.51	31.04	54.00	22.96	0.07	V	170.6	1.00	1.000
11,304.375	39.61	74.00	34.39	28.07	54.00	25.93	-0.99	V	7.7	1.00	1.000

3DH5-Channel 39

Spectrum Overview H/V

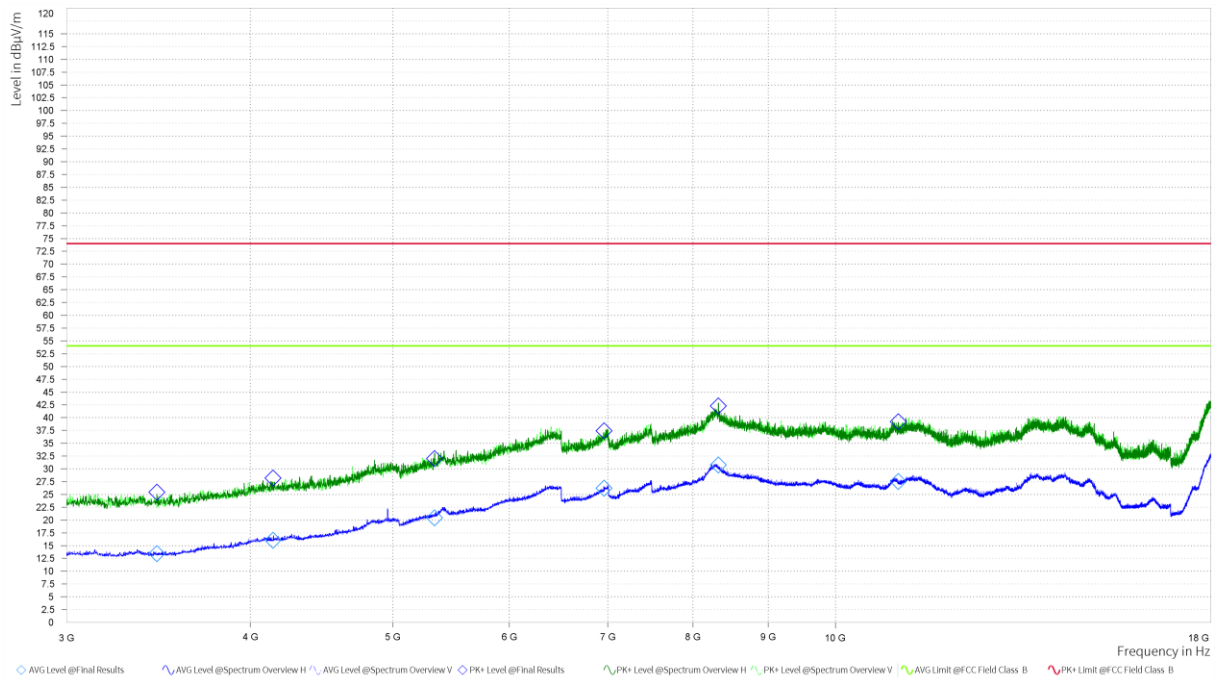


Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
1,054.000	30.43	74.00	43.57	18.53	54.00	35.47	-11.33	V	136.4	1.00	1.000
1,324.250	31.61	74.00	42.39	19.46	54.00	34.54	-10.61	V	180	1.00	1.000
1,638.750	30.63	74.00	43.37	18.86	54.00	35.14	-10.56	H	146.6	1.00	1.000
1,930.250	32.01	74.00	41.99	19.97	54.00	34.03	-9.37	H	163	2.00	1.000
2,312.250	33.12	74.00	40.88	20.88	54.00	33.12	-7.97	H	167.1	1.00	1.000
2,679.500	34.24	74.00	39.76	21.80	54.00	32.20	-6.93	H	50.8	1.00	1.000

Spectrum Overview H/V

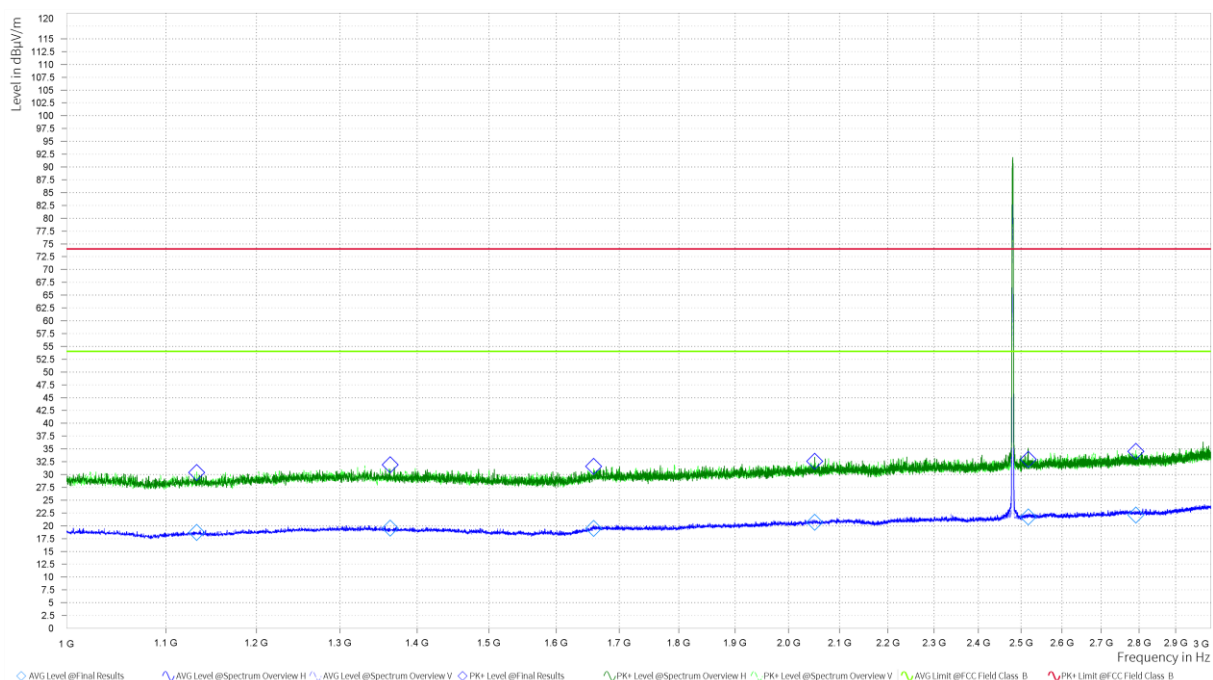


Radiates Emission from 3GHz to 18GHz

Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
3,455.625	25.41	74.00	48.59	13.39	54.00	40.61	-15.29	H	7.4	2.00	1.000
4,143.750	28.15	74.00	45.85	16.02	54.00	37.98	-13.32	H	0	1.00	1.000
5,338.125	31.98	74.00	42.02	20.42	54.00	33.58	-8.96	H	39.4	1.00	1.000
6,960.000	37.40	74.00	36.60	26.18	54.00	27.82	-4.94	V	83.1	2.00	1.000
8,325.000	42.26	74.00	31.74	30.74	54.00	23.26	-0.40	H	98.4	1.00	1.000
11,034.375	39.16	74.00	34.84	27.51	54.00	26.49	-2.06	H	177	1.00	1.000

3DH5-Channel 78

Spectrum Overview H/V

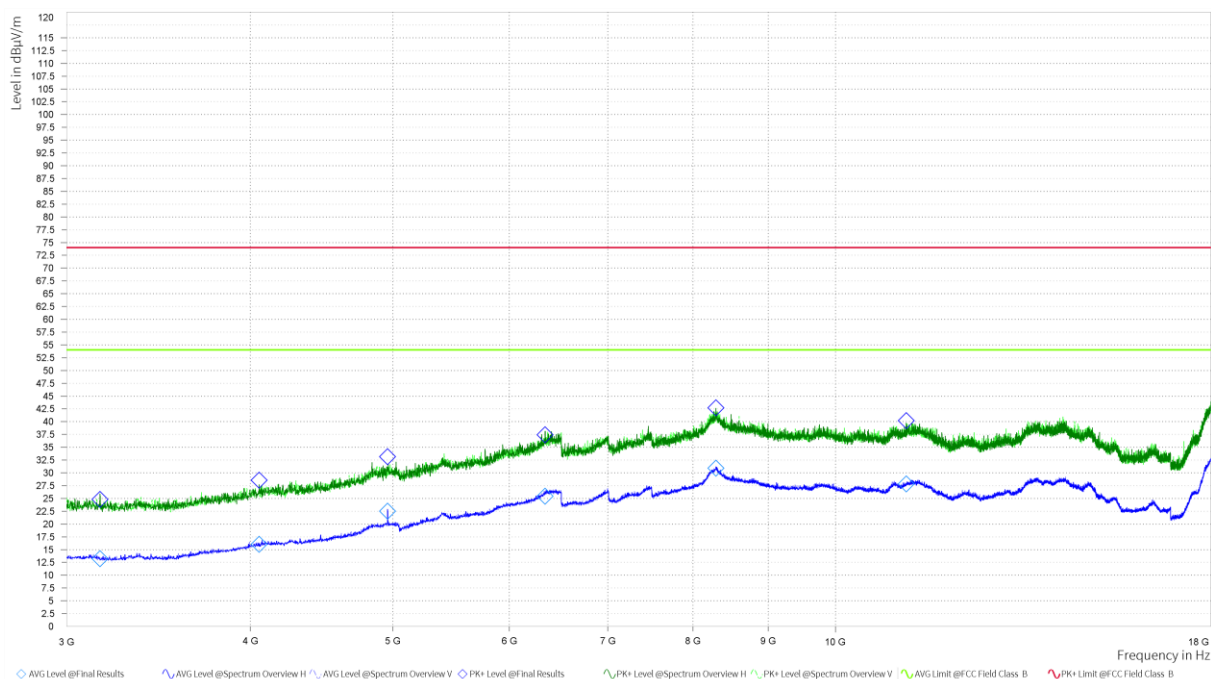


Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
1,133.000	30.38	74.00	43.62	18.68	54.00	35.32	-10.85	V	112.4	2.00	1.000
1,364.250	31.86	74.00	42.14	19.53	54.00	34.47	-10.62	H	98.4	1.00	1.000
1,658.500	31.54	74.00	42.46	19.48	54.00	34.52	-10.32	V	10.1	2.00	1.000
2,050.750	32.57	74.00	41.43	20.65	54.00	33.35	-8.58	H	170.1	2.00	1.000
2,517.250	32.94	74.00	41.06	21.73	54.00	32.27	-7.25	H	129.4	2.00	1.000
2,791.750	34.47	74.00	39.53	22.09	54.00	31.91	-6.44	V	26.9	1.00	1.000

Spectrum Overview H/V



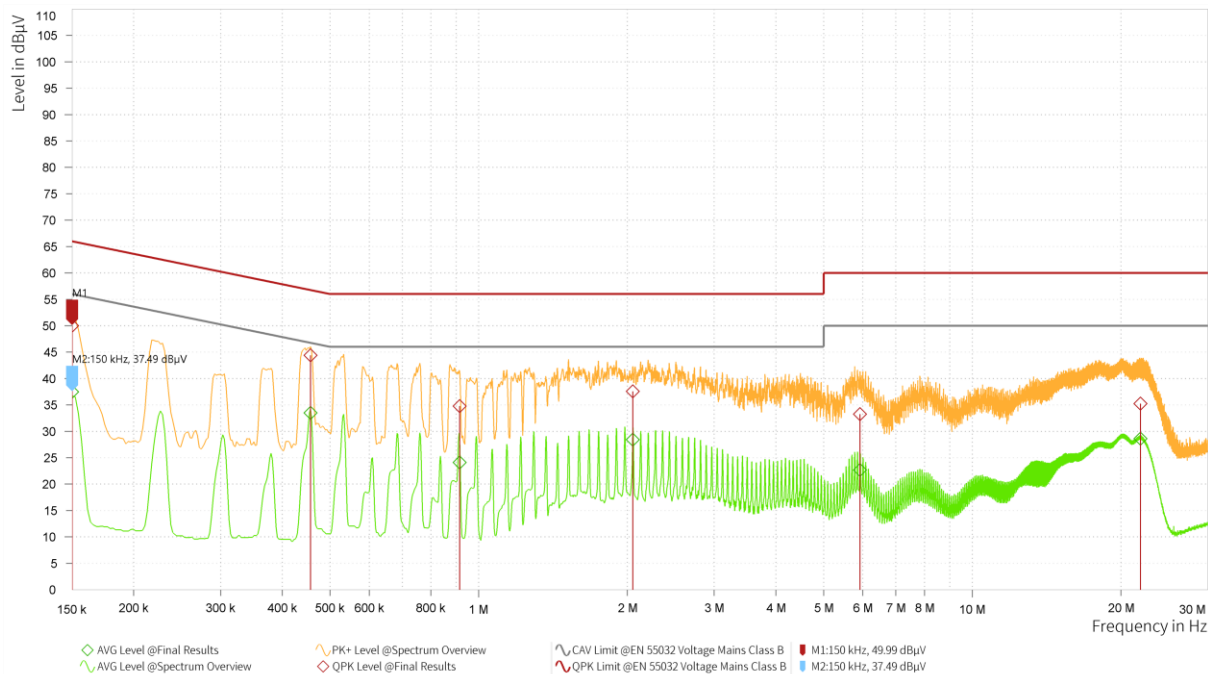
Radiates Emission from 3GHz to 18GHz

Frequency [MHz]	PK+ Level [dBμV/m]	PK+ Limit [dBμV/m]	PK+ Margin [dB]	AVG Level [dBμV/m]	AVG Limit [dBμV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. Time [s]
3,161.250	24.77	74.00	49.23	13.18	54.00	40.82	-15.55	H	18.7	1.00	1.000
4,055.625	28.54	74.00	45.46	16.04	54.00	37.96	-13.68	H	0	1.00	1.000
4,959.375	33.11	74.00	40.89	22.51	54.00	31.49	-9.74	H	175	2.00	1.000
6,346.875	37.40	74.00	36.60	25.40	54.00	28.60	-4.56	H	0	1.00	1.000
8,291.250	42.68	74.00	31.32	30.89	54.00	23.11	0.07	H	180	2.00	1.000
11,171.250	40.15	74.00	33.85	27.83	54.00	26.17	-1.34	H	178.6	1.00	1.000

2. Conducted Emission

2.1. Bluetooth

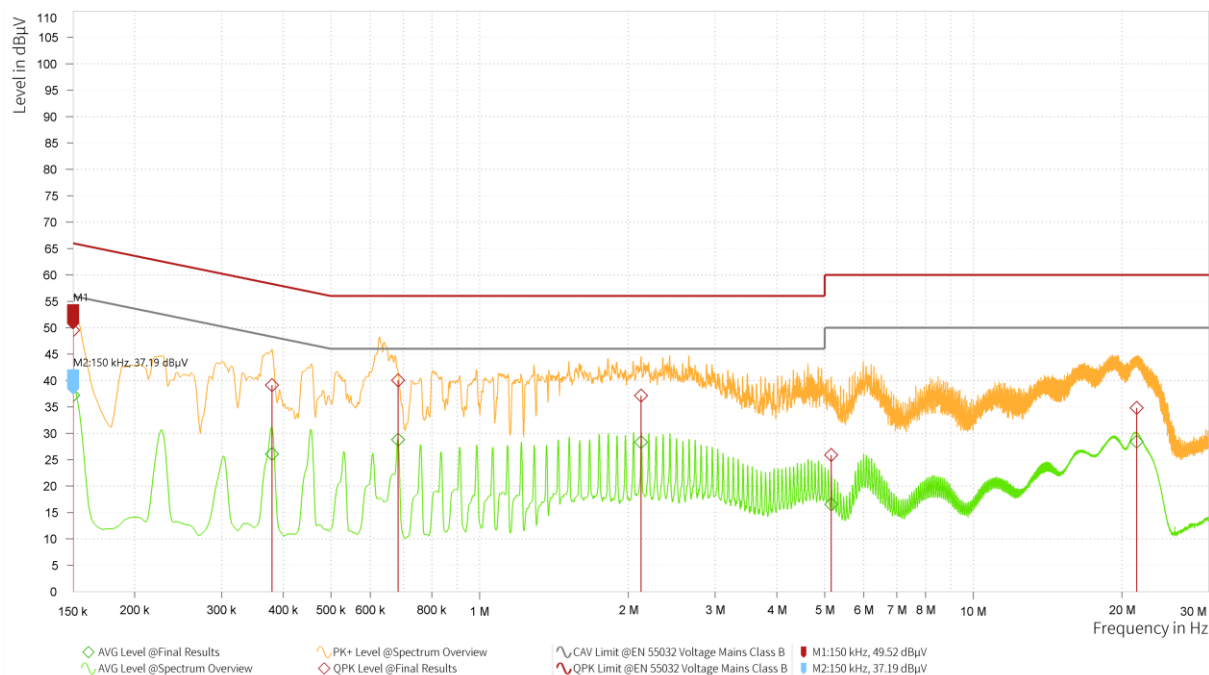
During the test, the Conducted Emission was performed in all modes with all channels. The test data of the worst-case condition was recorded in this report.



Frequency [MHz]	QPK Level [dBμV]	QPK Limit [dBμV]	QPK Margin [dB]	AVG Level [dBμV]	AVG: CAV Limit [dBμV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
0.150	49.99	66.00	16.01	37.49	56.00	18.51	20.90	L1	9.000	1.000
0.456	44.40	56.77	12.37	33.49	46.77	13.27	20.82	L1	9.000	1.000
0.915	34.78	56.00	21.22	24.12	46.00	21.88	20.23	L1	9.000	1.000
2.051	37.56	56.00	18.44	28.39	46.00	17.61	19.64	L1	9.000	1.000
5.924	33.24	60.00	26.76	22.66	50.00	27.34	19.40	L1	9.000	1.000
21.912	35.24	60.00	24.76	28.61	50.00	21.39	19.70	L1	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 kHz to 30 MHz



Frequency [MHz]	QPK Level [dBμV]	QPK Limit [dBμV]	QPK Margin [dB]	AVG Level [dBμV]	AVG: CAV Limit [dBμV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
0.150	49.52	66.00	16.48	37.19	56.00	18.81	20.91	N	9.000	1.000
0.380	39.12	58.29	19.17	26.11	48.29	22.18	20.91	N	9.000	1.000
0.683	40.02	56.00	15.98	28.79	46.00	17.21	20.60	N	9.000	1.000
2.123	37.14	56.00	18.86	28.32	46.00	17.68	19.63	N	9.000	1.000
5.154	25.90	60.00	34.10	16.54	50.00	33.46	19.41	N	9.000	1.000
21.446	34.81	60.00	25.19	28.43	50.00	21.57	19.73	N	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 kHz to 30 MHz